

In the Claims

1. (Currently Amended) A method for designing filters that approximates the circularly symmetric frequency response achievable using a non-separable filter comprising:

(a) selecting a cut-off frequency and designing therefrom a 1-D one-dimensional separable low pass filter (LP), LP being a row vector having entries LP such that: LP = [X_{-n}, X_{-(n-1)}, ... X₀, ... X_{n-1}, X_n];

(b) obtaining a 2-D two-dimensional filter LPP by performing the operation: LP* X LP₁ wherein LP* is being a column vector having the same entries as LP₁ and LPP having dimensions given by: {2n+1, 2n+1};

(c) and generating a 2-D two-dimensional contour contour plot for the two-dimensional filter LPP therefor;

(d)(e) designing a 4-D one-dimensional separable high pass filter (HP), HP being a row vector having entries such that: HP = [Y_{-m}, Y_{-(m-1)}, ... Y₀, ... Y_{m-1}, Y_m];

(e)(f) obtaining a 2-D two-dimensional filter HPP by performing the operation: HP* X HP₁ wherein HP* is being a column vector having the same entries as HP₁ and HPP having dimensions: {2m+1, 2m+1};

(f) and obtaining generating a 2-D two-dimensional contour plot for the two-dimensional filter HPP therefor; (e) repeating (e) through (d) until the 2-D contour plot of HPP overlaps the 2-D contour plot of LPP;

(g)(f) generating a 2-D two-dimensional filter (ONE) when the two-dimensional contour plot for the two-dimensional separable filter LPP overlaps the two-dimensional contour plot for the two-dimensional separable filter HPP, ONE having the same dimensions of that of HPP with the only non-zero entry of value 1 being located at the center of ONE;

(h)(g) creating matrix HPPinv by subtracting HPP from ONE to create matrix HPPinv;

(h)(g) convolving LPP with HPPinv to obtain DSCRN having dimensions: {2m+2n+1, 2m+2n+1};

(i) and obtaining generating a 2-D two-dimensional contour plot for DSCRN therefor; and

(j)(f) constructing a filter to eliminate moiré in a rendered image when repeating (a) through (h) until, by an examination of the 2-D two-dimensional contour plot of for DSCRN, is an approximation to a desired circular symmetry is achieved, the filter being constructed of LLP and HHP.

Claims 2-6 (Cancelled)